

Iron Deficiency Anemia Leads to Increased Rates of Postoperative Outcomes in Primary Total Knee Arthroplasty Patients: Minimum 2-Year Surveillance

Introduction: In patients undergoing total knee arthroplasty (TKA), the effects of underlying iron deficiency anemia (IDA) on postoperative outcomes have not been extensively studied. This study evaluates whether IDA affects postoperative outcomes in patients undergoing TKA.

Methods: The New York State's Statewide Planning and Research Cooperative System database was retrospectively queried for 92,627 patients undergoing primary TKA between 2009 and 2013 with a minimum 2-year surveillance. 1:1 propensity score matching based on age, gender, and obesity status was performed to split patients into two cohorts based on IDA status (n=1440 each, 2880 total). Demographic, perioperative, and postoperative variables (surgical complications, medical complications, readmissions, TKA revisions, reoperations, in-hospital mortality) were compared. Multivariate binary logistic regression analysis with covariates (age, gender, and obesity status) was used to determine IDA as an independent predictor of postoperative outcomes.

Results: The two cohorts were comparable in terms of age, gender, obesity status, race, payment method, and total surgical charges. The IDA cohort had longer total hospital stays than the non-IDA cohort (4.2 days vs. 3.8 days; $p < 0.001$). IDA patients had higher rates of overall surgical complications, transfusions of blood, overall medical complications, altered mental status, acute myocardial infarction (MI), acute renal failure, sepsis, and readmission (all, $p < 0.05$).

Conclusion: Iron deficiency anemia patients undergoing total knee arthroplasty had longer hospital stays and higher rates of adverse postoperative outcomes. In planning postoperative management, surgeons should prepare for possible complications in advance, considering how iron deficiency anemia poses a higher risk for adverse postoperative outcomes in patients undergoing total knee arthroplasty.